IN REPLY
REFER TO: Joint Interoperability Test Command (JTE)   **5 Oct 09**

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Extension of the Special Interoperability Test Certification of the Cisco Optical
Network System (ONS) 15310 with Software Release 8.5.1

References: (a) DoD Directive 4630.5, "Interoperability and Supportability of Information
Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) CJCSI 6212.01D, "Interoperability and Supportability of Information
Technology and National Security Systems," 8 March 2006
(c) through (f)

1. References (a) and (b) establish the Defense Information Systems Agency (DISA), Joint
Interoperability Test Command (JITC), as the responsible organization for interoperability test
certification.

2. The Cisco ONS 15310 with Software Release 8.5.1 is hereinafter referred to as the System
Under Test (SUT). The SUT can be configured as either of the following two platforms: ONS
15310-Customer Location (CL) Synchronous Optical Network (SONET) Multiservice Platform
(MSP) and ONS 15310-Metro Access (MA) Multiservice Provisioning Platform (MSPP). Both
the ONS 15310-CL SONET MSP and ONS 15310-MA MSPP platform configurations were
tested and are covered under this certification. The SUT meets all of the critical interoperability
requirements for the Defense Switched Network (DSN) and is certified for joint use. The SUT
met the critical interoperability requirements for a Strategic Network Element set forth in
appendices 5 and 9 of Reference (c) using test procedures derived from Reference (d). No other
configurations, features, or functions, except those cited within this report, are certified by the
JITC. This certification expires upon changes that affect interoperability, but no later than three
years from the date of this memorandum.

3. The extension of this certification is based upon Desktop Review (DTR) #1. The original
certification is based on interoperability testing conducted by JITC, review of the vendor's
Letters of Compliance (LoC), and Defense Information Assurance (IA)/Security Accreditation
Working Group (DSAWG) accreditation. Interoperability testing on the ONS 8.5.1 was
conducted by JITC at the Global Information Grid Network Test Facility, Fort Huachuca,
Arizona from 5 through 23 January 2009. Review of the vendor's LoC was completed on 11
February 2009. DSAWG grants accreditation based on the security testing completed by DISA-
led Information Assurance test teams and published in a separate report (Reference (e)).
DSAWG accreditation was granted on 11 August 2009. The Certification Testing Summary
(Reference (f)) documents the test results and describes the test network. DTR#1 was requested

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to include updated software release 8.6 for the ONS chassis. The desktop review request was approved on 26 August 2009. DSAWG accreditation was granted on 23 September 2009.

4. The SUT Interoperability Test Summary is shown in Table 1 and the Capability and Feature Requirements used to evaluate the interoperability of the SUT are indicated in Table 2.

Table 1. SUT Interoperability Test Summary

DSN Access Interfaces			
Interface & Signaling	**Critical**	**Status**	**Remarks**
T1 CAS (AMI/SF) DTMF, DP, MFR1	No[1]	Certified	Met all CRs and FRs.
T1 CAS (B8ZS/ESF) DTMF, DP, MFR1	No[1]	Certified	Met all CRs and FRs.
T1 PRI (ANSI T1.619a)	No[1]	Certified	Met all CRs and FRs.
T1 SS7 (ANSI T1.619a)	No[1]	Certified	Met all CRs and FRs.
E1 CAS (HDB3) DTMF, MFR1, DP	No[1] (Europe only)	Not Tested	E1 CAS is not supported by the SUT. This is not a required interface for a S-NE. There is no risk associated with the SUT not supporting this interface.
E1 ISDN PRI (ITU-T Q.955.3)	No[1] (Europe only)	Not Tested	E1 ISDN PRI is not supported by the SUT. This is not a required interface for a S-NE. There is no risk associated with the SUT not supporting this interface.
E1 SS7 (ANSI T1.619a)	No[1] (Europe only)	Not Tested	E1 SS7 is not supported by the SUT. This is not a required interface for a S-NE. There is no risk associated with the SUT not supporting this interface.
DS3	No[1]	Certified	Met all CRs and FRs.
10/100 Mbps Ethernet	No[1]	Certified	Met all CRs and FRs.

DSN Transport Interfaces				
Optical Carrier Level	**Transport Level**	**Critical**	**Status**	**Remarks**
OC-3	VT1.5	No[3]	Certified	Met all CRs and FRs.
OC-3	STS-1	No[3]	Certified	Met all CRs and FRs.
OC-12	VT1.5	No[3]	Certified	Met all CRs and FRs.
OC-12	STS-1	No[3]	Certified	Met all CRs and FRs.
OC-48[2]	VT1.5	No[3]	Certified	Met all CRs and FRs.
OC-48[2]	STS-1	No[3]	Certified	Met all CRs and FRs.

Features And Capabilities			
Features and Capabilities	**Critical**	**Status**	**Remarks**
Synchronization	Yes	Certified	Met all CRs and FRs.
Network Management	Yes	Certified	Met all CRs and FRs.
Security	Yes	See note 4.	See note 4.

NOTES:
1   The UCR does not stipulate a minimum Access interface requirement for a Strategic Network Element.
2   The OC-48 Transport Interface is only available on the ONS 15310-MA.
3   The UCR does not stipulate a minimum Transport interface requirement for a Strategic Network Element.
4   Information assurance testing is accomplished via DISA-led Information Assurance test teams and published in a separate report, Reference (e).

Table 1. SUT Interoperability Test Summary (continued)

LEGEND:			
AMI	Alternate Mark Inversion		
ANSI	American National Standards Institute	MA	Metro Access
B8ZS	Bipolar Eight Zero Substitution	Mbps	Megabits per second
CAS	Channel Associated Signaling	MFR1	Multi-frequency Recommendation 1
CRs	Capability Requirements	MLPP	Multi-Level Precedence and Preemption
DISA	Defense Information Systems Agency	OC-3	Optical Carrier Level 3 (155 Mbps)
DP	Dial Pulse	OC-12	Optical Carrier Level 12 (622 Mbps)
DS3	Digital Signal Level 3 (44.736 Mbps)	OC-48	Optical Carrier Level 48 (2.448 Gbps)
DSN	Defense Switched Network	ONS	Optical Network System
DTMF	Dual Tone Multi-Frequency	PRI	Primary Rate Interface
E1	European Basic Multiplex Rate (2.048 Mbps)	Q.955.3	ISDN Signaling Standard for E1 MLPP
ESF	Extended Super Frame	SF	Super Frame
FRs	Feature Requirements	S-NE	Strategic Network Element
Gbps	Gigabits per second	SS7	Signaling System 7
UCR	Generic Switching Center Requirements	SUT	System Under Test
HDB3	High Density Bipolar 3	STS	Synchronous Transport Signal
ISDN	Integrated Services Digital Network	T1	Digital Transmission Link Level 1 (1.544 Mbps)
ITU-T	International Telecommunication Union – Telecommunication Standardization Sector	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
		VT1.5	Virtual Tributary

Table 2. SUT Capability and Feature Interoperability Requirements

DSN Access Interfaces			
Interface	**Critical**	**Requirements Required or Conditional**	**References**
T1 CAS T1 SS7 (ANSI T1.619a) T1 ISDN PRI NI2 (ANSI T1.607 / ANSI T1.619a) E1 ISDN PRI (ITU-T Q.955.3) E1 CAS E1 SS7 (ANSI T1.619a) DS3 10/100 Mbps Ethernet	No[1] No[1] No[1] No[1] (Europe only) No[1] (Europe only) No[1] (Europe only) No[1] No[1]	• DS1 Interface Characteristics (C) • DS1 Supervisory Channel Associated Signaling (C) • DS1 Clear Channel Capability (C) • DS1 Alarm and Restoral Requirements (C) • E1 Interface Characteristics (C) • E1 Supervisory Channel Associated Signaling (C) • E1 Clear Channel Capability (C) • E1 Alarm and Restoral Requirements (C) • MOS (R) • BERT (R) • Secure Transmission (Voice and Data) (R) • Modem (R) • Facsimile (R) • Call Control Signals (R) • Delay (R) • Call Congestion Control (R) • Call Congestion (R) • Voice Compression (C) • DS3 Interface Requirements (R) • IP Interface (C)	• UCR para. A9.5.1.2.4 • UCR para. A9.5.1.2.4 • UCR para. A9.5.1.2.4 • UCR para. A9.5.1.2.4 • UCR para. A9.5.1.2.5 • UCR para. A9.5.1.2.5 • UCR para. A9.5.1.2.5 • UCR para. A9.5.1.2.5 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1.2 • UCR para. A9.5.1.1.2 • UCR para. A9.5.1.1.4 • UCR para. A9.5.1.2.6 • UCR para. A9.5.1.2.9
DSN Transport Interfaces			
Interface	**Critical**	**Requirements Required or Conditional**	**References**
OC-3 OC-12 OC-48	No[2] No[2] No[2]	• MLPP (R) • GR-303-CORE (R) • GR-253-CORE (R) • GR-782-CORE (R) • ANSI T1.105-2001 (R) • DS1 Rate Transport via VT 1.5 (R) • DS1 Rate Provisioning (R) • DS0 Call Processing (R) • DS0 to OC-3 Route Assignment (R) • Facility Alarms (R) • DS1 AIS/Yellow (R) • DS0 AIS/DS0 RAI (R) • Synchronization in accordance with GR-518-CORE (R) • Synchronization in accordance with GR-253-CORE (R) • Synchronization in accordance with GR-436-CORE (R) • Reliability (R) • Security (R) • MOS (R) • BERT (R) • Secure Transmission (Voice and Data) (R) • Modem (R) • Facsimile (R) • Call Control Signals (R) • Delay (R) • Call Congestion Control (R) • IP Congestion Control (C) • Voice Compression (C)	• UCR para. A5.5.1 • UCR para. A5.5.2 • UCR para. A5.5.2 • UCR para. A5.5.2 • UCR para. A5.5.2 • UCR para. A5.5.2 • UCR para. A5.5.2 • UCR para. A5.5.2 • UCR para. A5.5.3 • UCR para. A5.5.4 • UCR para. A5.5.4 • UCR para. A5.5.4 • UCR para. A5.5.5 • UCR para. A5.5.5 • UCR para. A5.5.5 • UCR para. A5.5.6 • UCR para. A5.6 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1 • UCR para. A9.5.1.1.2a • UCR para. A9.5.1.1.2b • UCR para. A9.5.1.1.4

Table 2. SUT Capability and Feature Interoperability Requirements (continued)

SUT Features And Capabilities			
Feature/Capability	Critical	Requirements Required or Conditional	References
Synchronization	Yes	• Timing (R)	• UCR para. A9.5.1.2.7

Network Management	Yes	• Management Option (R)
		  - Local Management (Front Panel and/or External Console) (C)
		  - ADIMSS (C)
		• Fault Management (C)
		• Loop Back Capability (C)
		• Operational Configuration Restoral (R)
			• UCR para. A9.5.2.1
			
			• UCR para. A9.5.2.2
			• UCR para. A9.5.2.3
			• UCR para. A9.5.3

Security	Yes	• DIACAP and STIGs (R)	• UCR para. A9.6

NOTES:
1 The UCR does not stipulate a minimum Access interface requirement for a Strategic Network Element.
2 The UCR does not stipulate a minimum Transport interface requirement for a Strategic Network Element.

LEGEND

A	Appendix	ISDN	Integrated Services Digital Network
ADIMSS	Advanced DSN Intergraded Management Support System	ITU-T	International Telecommunication Union - Telecommunication Standardization Sector
ANSI	American National Standards Institute	LSSGR	Local Access and Transport Area (LATA) Switching
AIS	Alarm Indication Signal		Systems Generic Requirements
BERT	Bit Error Rate Test	Mbps	Megabits per second
C	Conditional	MLPP	Multi-Level Precedence and Preemption
CAS	Channel Associated Signaling	MOS	Mean Opinion Score
DIACAP	Department of Defense Information Assurance Certification and Accreditation Process	OC-3	Optical Carrier Level 3 (155 Mbps)
		OC-12	Optical Carrier Level 12 (622 Mbps)
DS0	Digital Signal Level 0	OC-48	Optical Carrier Level 48 (2.448 Gbps)
DS1	Digital Signal Level 1	para	paragraph
DS3	Digital Signal Level 3	PRI	Primary Rate Interface
DSN	Defense Switched Network	Q.955.3	ISDN Signaling standard for E1 MLPP
DSS1	Digital Subscriber Signaling 1	R	Required
E1	European Basic Multiplex Rate (2.048 Mbps)	RAI	Remote Alarm Indication
Gbps	Gigabits per second	SONET	Synchronous Optical Network
GR	Generic Requirement	SS7	Signaling System 7
GR-253-CORE	SONET Transport Systems: Common Generic Criteria	STIGs	Security Technical Implementation Guides
		SUT	System Under Test
GR-303-CORE	Integrated Digital Loop Carrier System Generic Requirements, Objectives, and Interface	T1	Digital Transmission Link Level 1 (1.544 Mbps)
		T1.105-2001	SONET – Basic Description include Multiplexer structure, rates, formats
GR-436-CORE	Digital Network Synchronization Plan		
GR-518-CORE	LSSGR: Synchronization, Section 18	T1.607	ISDN – Layer 3 Signaling Specification for Circuit Switched Bearer Service for DSS1
GR-782-CORE	SONET Digital Switch Trunk Interface Criteria		
UCR	Generic Switching Center Requirement	T1.619a	SS7 and ISDN MLPP Signaling Standard for T1
IP	Internet Protocol	VT1.5	Virtual Tributary 1.5

5. No detailed test report was developed in accordance with the Program Manager's request. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified-But-Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/gov users on the NIPRNet at https://stp.fhu.disa.mil. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at http://jit.fhu.disa.mil (NIPRNet), or http://199.208.204.125 (SIPRNet). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at http://jitc.fhu.disa.mil/tssi.

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6. The JITC point of contact is Mr. Edward Mellon, DSN 879-5159, commercial (520) 538-5159, FAX DSN 879-4347, or e-mail to edward.mellon@disa.mil. The JITC's mailing address is P.O. Box 12798, Fort Huachuca, AZ 85670-2798. The tracking number for the SUT is 0822401.

FOR THE COMMANDER:

2 Enclosures a/s   for RICHARD A. MEADOR
                                            Chief
                                            Battlespace Communications Portfolio

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    Division, J68
Defense Information Systems Agency, GS23

ADDITIONAL REFERENCES

(c)   Defense Information Systems Agency, "Department of Defense Voice Networks Unified Capabilities Requirement," 21December 2007

(d)   Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP), Change 2," 2 October 2006

(e)   Joint Interoperability test Command, "Information Assurance (IA) Assessment of Cisco Optical Network System (ONS) with Software Release 8.5 (Tracking Number 0822401)," 11 August 2009

(f)   Special Interoperability Test Certification of the Cisco Optical Network System (ONS) 15310 with Software Release 8.5.1